TITLE: KNOWLEDGE AGAINST CREDIT MARKET RESTRICTIONS. WHICH IS THE PROBLEM FOR SMEs' INTERNATIONALISATION?

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ABSTRACT

Small and medium-sized enterprises (SMEs) can improve their export performance by adopting appropriate marketing strategies. However, firms' lack of resources, such as the unavailability of credit, can make this endeavour much more difficult. In this paper, we analyse the role of collaborations and the possibility of using non-financial tailored resource-based institutional support, as a tool that managers may use to try to overcome liquidity constraints provoked by tough credit market restrictions. To achieve this, the analysis should be carried out using a contrafactual framework. Therefore, we use firm-level data of 1,585 firms that have used this type of support during the 2000-2013 period, to which we match non-benefitting firms correcting for selection bias using matching techniques and evaluating effects three years after receiving support. Our results show that SMEs that developed their international marketing strategies this way had better export performance, especially during the period with credit market restrictions.

1. **Introduction**

With intensifying globalisation, a greater number of small and medium-sized enterprises (SMEs) face the question of whether and how they should internationalise their business. However, many companies are unable or unwilling to pursue export sales aggressively because of lack of experience, limited resources, or other perceived or real obstacles (Francis and Collins-Dodd, 2004).

Firms self-select into exporting if their productivity is enough to cover the marginal costs that exporting entails (Broocks and Van Biesebroeck, 2017). This hurdle constitutes an initial barrier for companies that want to start exporting or to become regular exporters (Bernard and Bradford, 2004; Dixit, 1989; Greenaway et al., 2005), which are those firms that export for at least four consecutive years.

Programmes that show SMEs with exporting potential how to allocate resources efficiently can help them to reduce fixed and variable entry costs during the initial stages of their internationalisation process. This initial hurdle is key for SMEs as exporting is a persistent phenomenon, that is to say, being an exporter increases the probability to export in the future (Bernard and Bradford, 2004; Besedes et al., 2014; Greenaway et al., 2005). In this sense, institutional support through non-financial export promotion programmes (EPPs) built on the resource-based view (RBV) framework (Barney, 1991; Penrose, 1959) and network relationships (Johanson and Mattson, 1988), can provide SMEs with knowledge on internationalisation, especially on foreign market characteristics and firms' opportunities (Basle et al., 2018), and help them to build trust relationships (Coudounaris, 2018), so they can develop competitive strategies for improving their export performance.

However, usefulness of institutional incentives depends on many factors such as the knowledge provided by the programmes, the individual firms' characteristics, the business sphere in which they operate, and their target export markets (Wang et al., 2017).

If we focus on the firms' characteristics, Girma et al. (2009) show that exporters are bigger in terms of assets, employees, and sales than non-exporters, and normally were established earlier. Kottaridi and Lioukas (2017) also state that size and age of firms are important determinants of export market participation within the RBV. Therefore, considering that on average, non-exporters are smaller, have higher financial constraints, and lower probability to enter into foreign markets due to high entry costs (Abor et al., 2014; European Commission, 2015; Greenaway et al., 2005), from a managerial and a policymaker point of view, how to initiate the exporting process becomes a prime objective. Another point to consider is the business sphere. Here, focusing on the Spanish case, the economic environment from 2000 to 2013 can be clearly differentiated in two periods. From 2000 to 2006 the Spanish economy faced a favourable economic environment with an average gross domestic product (GDP) growth rate of 3.6% while 2007 marked a turning point, but still with a positive GDP growth of 1.1%. From 2008 to 2013, Spain faced an important recession with negative GDP growth every year (source: Spanish National Institute of Statistics). The first period was accompanied by easier and better access to credit while in 2007 monetary conditions hardened, including delay in payments from public authorities, and from 2008, Spanish companies suffered important credit restrictions, which lasted until 2013 (Central Bank of Spain, 2014). In this scenario of low local demand and almost total lack of credit financing due to the economic expectations, Spanish firms turned to the export market for survival. (Graphic evidence of the number of exporting firms, and the credit market restrictions during this period may be seen in Appendix B).

In this scenario, EPPs that provide knowledge and continuous learning need to prove to be effective for non-exporters and sporadic exporters, especially, knowing that the main SMEs perceptions of external barriers for internationalisation were lack of capital, and lack of adequate public support (European Commission, 2015). Therefore, the main aim of this research is to assess if managers can rely on non-financial EPPs built on the RBV framework under such credit market restrictions or, on the other hand, these programmes should be readjusted considering those differential features linked to each period. To achieve this, the analysis should be carried out using a contrafactual framework building paired samples of firms previously matched by their financial structure and by period, in order to compare the export performance of the participants with those in the control group. Our results confirm positive effects for firms that take advantage of the programme, especially in the period of the credit restrictions.

The remainder of the paper is organised as follows. In the next section we present previous studies on the effectiveness of EPPs and stress those factors that the literature considers as main hurdles for the internationalisation of SMEs, paying special attention to firms' financial constraints. Sections three and four outline the data used in the study and econometric methodology applied, respectively. In section five we show the results

obtained, while in section six we discuss our results and the reasons which may explain them, and present suggestions for future research. In section six we state our conclusions.

2. <u>Literature review</u>

It seems reasonable to assume that, during the internationalisation process, SMEs share similar problems. However, even though conditions of SMEs' participation in foreign markets may differ across businesses, the key factors of success are also almost the same (Kubíčková and Procházková, 2014). Some authors (Fayos et al., 2015; Korsakiene, 2014) point out that SMEs have more difficulties when starting to export and these difficulties could make them fail when doing so. Consequently, less experienced exporters need tailored advisory as each company has its unique profile (Freixanet, 2012).

This statement points directly to focussing on the effects of non-financial tailored resource-based EPPs in the form of facilitating knowledge transfer, learning and human capital development, international experience sharing among firms and network structure, and see their impact on the export performance of firms, according to the RBV, while controlling for financial constraints in the form of a general reduction in the availability of credit.

2.1. Usage of EPPs and firms' export performance

A good summary of the literature evaluating the impact of EPPs may be seen in Van Biesebroeck et al., (2016, p. 661) differentiated by export promotion measures, aggregated or firm-level analysis, and from both perspectives, a macro and micro level. In Freixanet, (2012), p. 1078), the author also presents a summary of studies from different points of view, including methodology and different perspectives on the evaluation of programmes. However, it is worth saying that the literature focuses mainly on the effects on export performance of current exporters and pays less attention to new exporters, primarily because of data constraints (Broocks and Van Biesebroeck, 2017).

Among the literature, the impact of EPPs is ambiguous. Some studies present EPPs net positive effects (Broocks and Van Biesebroeck, 2017; Cansino et al., 2013; Freixanet, 2012; Karoubi et al., 2018; Munch and Schaur, 2018; Van Biesebroeck et al., 2016). On the other hand, several studies on export support programs point out that either the programmes have not been effective (Bernard and Bradford, 2004; Seringhaus, 1987) or they had non-significant or very small impact (Geldres-Weiss and Carrasco-Roa, 2016).

Despite the mixed evidence on the relationships between EPPs and export performance, to assess the effectiveness of official programmes to enhance the internationalisation of firms is not easy. Some studies (Francis and Collins-Dodd, 2004; Gengtiirk and Kotabe, 2001; Moini, 1998; Seringhaus, 1987; Volpe et al., 2012) defend that the firm's perception of the help received depends on their attitude and on their phase in the internationalisation process. Francis and Collins-Dodd (2004) state that non-exporting companies and those with wide international experience do not perceive value on this type of support but, exporters with less experience, sporadic or regular, do perceive value on the programmes.

Freixanet (2012) agrees that the highest impact is found for beginners and those firms that were developing their internationalisation process. However, consolidated exporters were the ones who knew more about the programmes and therefore used them more.

Other authors (Helmers and Trofimenko, 2009) think that studies on EPPs that show the value perceived by firms should be nuanced, at least partially, as most of the works on export support impact have been made using aggregated data, when, supports are negotiated at a company level, case by case.

Based on the above argumentation, we pose the following hypothesis:

H1: SMEs that use non-financial tailored resource-based programmes to develop their export marketing strategies improve their export performance (more than non-treated firms).

2.2. Resource-based EPPs and firms' export performance

Public programmes may provide financial support in the form of subsidies on exports. However, several studies present doubts about the positive effect of direct financial aid. Girma et al. (2009) and Görg et al. (2008) showed that there is little or no evidence that financial subsidies encourage non-exporters to start exporting. Zia (2008) even affirms that the removal of subsidised credit causes a significant decline in exports.

In a broader sense Pergelova and Angulo-Ruiz (2014), in line with Freixanet (2012), state that government programmes of financial aid (capital and guarantees) do not have direct impact on the firms' financial variables but only an indirect impact through the development of competitive advantages based on innovation, licensees, marketing, and human capital.

In this scenario, EPPs' advisory scope plays an important role in solving SMEs' needs. Previous studies (Calderón and Fayos, 2004; Cavusgil and Zou, 1994; Fayos et al., 2015; Korsakiene, 2014; Kotabe and Czinkota, 1992; Moini, 1998) state that it is necessary to determine which are the real industry/firm needs considering their level of internationalisation (export phase) and to analyse if the institutional programmes fit those needs. Karoubi et al. (2018) based on Freixanet (2012), distinguish four different types of support: financial, competencies, network, and innovation but, stated that only network EPPs impact the probability of turning into export. For Coudounaris (2018), engaging export strategy and trust relationships together, that is to say, with the adoption of an RBV that enhances trust relationships, take on a crucial role between export resources and capabilities (R&C) and export performance. Kottaridi and Lioukas (2017) show that collaborations abroad are the most significant among competencies for SMEs, especially for smaller firms as their limited financial resources confine their alternatives. In this sense, EPPs may help SMEs to identify customers and partners, among other services that can provide them with knowledge and export market orientation, which are also key determinants on export performance as stated by Basle et al. (2018), who analyse the usage and usefulness of public incentives as sources for acquiring market knowledge. Working with 79 SMEs and

using regression analysis, they show that market knowledge and exports, as mode of internationalisation, have a significant relationship and that market knowledge can be influential to the firms' financial income (from exports). Therefore, if the institutional support improves firms' R&C and match quality, then trade durations are longer especially for small and sporadic exporters who may gain from a reliable partner recommended by the programme. In this situation, Munch and Schaur (2018) consider that these firms, especially, can benefit from promotion programmes.

2.3. Credit market restrictions, non-financial resource-based EPPs, and firms' export performance

Studies within the RBV rarely use financial resources in their analyses, especially regarding the export decision and performance (Kottaridi and Lioukas, 2017). When considering institutional support programmes, although a considerable amount of references are related to export institutional support (Bernard and Bradford, 2004; Broocks and Van Biesebroeck, 2017; Cansino et al., 2013; Francis and Collins-Dodd, 2004; Freixanet, 2012; Geldres-Weiss and Carrasco-Roa, 2016; Girma et al., 2009; Görg et al., 2008; Karoubi et al., 2018; Moini, 1998; Munch and Schaur, 2018; Van Biesebroeck et al., 2016; Volpe et al., 2012; Wilkinson and Brouthers, 2006) they also rarely consider firms' financial structure even though financial variables are significant determinants of firms' decisions to enter foreign markets (Askenazy et al., 2015; Greenaway et al., 2005; Kottaridi and Lioukas, 2017; Manova et al., 2015; Muûls, 2008).

Greenaway et al. (2005) using financial statements of firms obtained from Bureau Van Dijk, show that financial variables are determinant for companies' decisions in order to start exporting. Askenazy et al., (2015) show that firms' liquidity and leverage ratios are highly significant, which indicate that firms with a higher level of debt have difficulties in financing entry costs into new export destinations, and in expanding their activity abroad. Kottaridi and Lioukas (2017), also using firms' liquidity and leverage ratios, state that liquidity constraints can drain the economy and undermine exports, and based on their results, they affirm that firms must have faced tremendous financial problems during the 2008 financial crisis, ´leading them to restrain or even reduce their exporting activity, especially as export credits and guarantees are not easy to find and investments abroad need to be paid in cash´.

In line with the above, and considering that credit market restrictions during the 2008 financial crisis (and following years) affected all firms, that is to say, it came from the offer side (unavailability of credit), we pose the following hypothesis:

H2: Tough credit market restrictions make non-financial tailored resource-based programmes ineffective to improve SMEs' export performance (in comparison to non-treated firms).

3. **Dataset**

We use firm-level data of Spanish firms that participated in ICEX, the Spanish export promotion agency, tailored 18-month resource-based programme, which we merge with two other data sources: the official export figures outside the EU from the customs department of the Spanish Ministry of the Treasury, and firms' information obtained from the Bureau Van Dijk database.

Our first data source comes from the ICEX 18-month resource-based programme for non-exporters and sporadic exporters, which focusses on SMEs with exporting potential that request advisory services to develop their international marketing strategy. To join the programme, the firms should have specific characteristics (sometimes relaxed) that determine the possibility of participating. These features are those that affect the treatment assignment and are summarised in the next section.

In relation to the export data of both groups, in line with Broocks and Van Biesebroeck (2017), ´it is important that all datasets cover the universe of active firms with no minimum size threshold´, so in order to overcome data constraints on intra-EU trade, we focus the analysis on extra-EU trade. Thus, we have highly reliable figures as firms must declare their exports outside the EU to the Treasury. We divide the official export figures in two sectors considering the firms' classification of economic activities, NACE 2009: extractive, manufacturing or construction (sec_1), and the rest of the industries without considering agriculture, forestry and fishing (sec_0).

Our third source of data contains individual firm information. For the treatment model, we divide our matching covariates into two groups. The industry of the firm, which (is likely to) remain the same over time, is considered a fixed characteristic, and those financial variables that help us to control for its financial structure, considering size, long and short-term financing possibilities. The number of firms that joined the programme in the selected period and exported outside the EU were 2,251. After the processes of merging data and matching, we reach a final number of 1,585 benefitting firms, 70% of total firms, which is highly representative in order to extrapolate our conclusions to the population.

4. **Methodology and variables**

4.1. Introduction

To identify the effects generated by the programme, the firm export performance must be compared both when receiving treatment and when it does not receive it. The fundamental evaluation problem arises because only one of the potential outcomes is observed for each firm. Hence, as stated by Caliendo and Kopeinig (2008), 'estimating the individual treatment effect is not possible and one has to concentrate on (population) average treatment effects. For this, we use the primary identification strategy followed in the existing literature, which is to condition on a set of observable characteristics and invoke the selection-on-observables assumption (Broocks and Van Biesebroeck, 2017).

More formally, we have a population P of SMEs, some of which have received treatment. Each unit $i \in P$ can be described by the following set $(y_{1i}, y_{0i}, d, z_i, \varepsilon_i)$, where y_{1i} and y_{0i} are the potential outcome of unit i whether the firm received treatment or not, respectively. d_i is the treatment variable, which takes value 1 if the firm participates in the programme and 0 if it does not, z_i is a vector of observable characteristics, and ε_i is a vector of unobservable characteristics. Benefitting firms (B) can be expressed by $B = \{i \in P | d_i = 1\}$ where we may observe $(y_{1i}, z_i, d = 1)$, whereas for non-benefitting firms (NB), $NB = \{i \in P | d_i = 0\}$ we may observe $(y_{0k}, z_k, d = 0)$. However, the treatment effect for unit i, $\delta_i = y_{1i} - y_{0i}$, is not identified as one of its elements is not observable, therefore we consider the average treatment effect (ATE) for the population: $\delta = E(y_1 - y_0) = E(y_1) - E(y_0)$.

4.2. Potential Outcome Model

We use the potential outcome approach or Roy-Rubin-model, Roy (1951), Rubin (1974). Algebraically, the potential-outcome model specifies that the observed outcome variable y is y_0 when $d = 0$ and that y is y_1 when $d = 1$.

$$y = (1 - d)\, y_0 + dy_1$$

The functional forms for y_0 and y_1 can be expressed as:

$$y_0 = x'\beta_0 + \epsilon_0$$
$$y_1 = x'\beta_1 + \epsilon_1$$

, where x_i is a vector of covariates that affect the outcome, β_0 and β_1 are coefficients to be estimated, and ϵ_0 and ϵ_1 are error terms that are not related to x.

The treatment assignment process is:

$$t = \begin{cases} 1 \ if \ w'\gamma + \eta > 0 \\ \ \ 0 \ \text{otherwise} \end{cases}$$

, where w_i is a vector of covariates that affect the treatment assignment, γ is a coefficient vector, and η is an unobservable error term that is not related to either x or w.

In order to analyse the export performance on the benefitting firms, we construct a control group obtaining pairs of firms that are the closest on those selected covariates. The fact that firms' participation in the programme is not given at random as they self-select for pre-joining, being finally selected based on several selection criteria, provides a primary selectivity bias. In order to avoid bias problems, we use a two-stage treatment effect model in which the first stage deals with the self-selection and selection bias problem, and the second stage evaluates the firms' export performance, measured by the increase in export sales. As the programme does not help to structure financing for the participants, we may state that the conditional independence assumption holds, and allows us to estimate $E(y_0 | x, w)$ and $E(y_1 | x, w)$ directly from the observations for which $E(y_0 | x, w, = t = 0)$ and $E(y_0 | x, w, = t = 1)$, respectively.

In our first stage, the aim is to match a benefitting firm to a non-benefitting firm that is *as similar as possible* based on observable firm characteristics when the benefitting firm joins the programme. To do so, following other studies (Broocks and Van Biesebroeck, 2017; Cansino et al., 2013; Girma et al., 2009; Karoubi, et al., 2018; Munch and Schaur, 2018), we use matching techniques to create a contrafactual group that is subject to the same shocks as the treated firms so the differences obtained on the outcome should not be driven by endogenous selection. At this stage, we should pay special consideration to Rubin (2008) recommendation in finding a model that balances the covariates before looking at results for the estimated treatment effect. The methodology used is the propensity score matching following Caliendo and Kopeinig (2008) references for the matching process.

4.3. Matching stage

For the selection of covariates, we take into consideration the existence of a period with liquidity constraints and previous references on the importance of financial variables affecting the export performance, especially in the first stages of the exporting process. In order to gain homogeneity between firms regarding financial constraints, we carry out separate matching on sub-populations following Heckman et al. (1997), in our case considering exact matching by sector. After reducing one dimension when splitting by sub-populations, we also match on three continuous financial covariates that are measured when the firm joins the programme.

As the firm's participation in the program happens only once, we implement the matching process for each year t_i of treatment, that is to say, from 2000 to 2013, and by sector groups (accounting $14*2 = 28$ sub-populations), carrying out the complete process for each one. This method allows us to use matching with replacement as a non-benefitting firm might be present in different years, which increases the average quality of matching and reduces bias. Given our concern about a correct matching, we divide the matching stage into two steps. First, for each treatment firm in year t_i, we use a nearest neighbour estimator, which issues the matching covariates to find the most similar individuals that get the other treatment level. The distance between x_i and x_j is parameterised by the vector norm:

$$\|x_i - x_j\|s = \left\{(x_i - x_j)^{'} S^{-1}(x_i - x_j)\right\}^{1/2}$$

Where S is a given symmetric, positive-definite matrix.

The number of matches can be adjusted based on the distance from observation i within the caliper limit, c, $\|x_i - x_j\|s \leq c$. We considered one-to-one matching using the bias corrector estimator proposed by Abadie and Imbens (2011) as we matched on four covariates, three of them being continuous financial variables.

In our second step, once we have obtained our pairs of matched firms for each of the 28 sub-populations, as the average treatment effect is only defined in the region of common support, we check the overlap assumption in each sub-population, (i.e., that each individual has a positive probability of receiving each treatment level $\acute{d}$, $0 < Pr(d = \acute{d}|x) < 1$). To do so, we estimate the propensity score (Rosenbaum and Rubin, 1983) using the Becker and Ichino (2002) estimator with a logit regression, which includes the same set of covariates as in our first step. We stratify individual firms in blocks according to the propensity score and, if needed, we drop those firms that are not in the region of common support until the balancing property is satisfied.

4.4. Export performance

In order to obtain the treatment effects, some authors that had panel data information before and after the firms' participation in a public programme used a difference in difference (DID) estimator (Geldres-Weiss and Carrasco-Roa, 2016; Görg et al., 2008; Munch and Schaur, 2018; Volpe et al., 2012; Zia, 2008). Therefore, in the model we added a time variable t that takes value 0 when each firm starts the programme, which jointly we call $t = 0$, and value 1 three years after, which jointly we call $t = 1$. Introducing the observable covariates in the analysis, the DID would be:

$$DID = \{E(y_{it=1}|D_{it=1} = 1, d_i = 1, z_i) - E(y_{it=1}|D_{it=1} = 0, d_i = 0, z_i)\}$$

$$- \{E(y_{it=0}|D_{it=0} = 0, d_i = 1, z_i) - E(y_{it=0}|D_{it=0} = 0, d_i = 0, z_i)\}$$

When for obtaining the export performance, we used the kernel estimator to consider the distance between matched firms in terms of the propensity score.

Finally, we divide our whole time period in two, before and from 2008, in order to see if the programme performs effectively in such different periods. By splitting the whole period, we also achieve more robustness as we reduce possible locking-in effects that might be created by different economic environments.

4.5. Variables

For the analysis, the set of variables fall within four groups which are analysed at the firm level. In the first group are those that affect the treatment assignment. To find matched firms to be *as similar as possible*, we go through the programme requirements and clean the dataset. In the control group there is no firm that has participated in an initiation programme at ICEX before. We also drop those firms that were incorporated since less than two years and that have an export sale on total sales ratio higher than 0.5. We were not able to find out if the firms in the control group exported to more than five markets or six clients, but it does not constitute any problem because this requirement is relaxed at ICEX and it is also a maximum requirement that, *a priori*, would be considered a *proxy* for more export experience, providing more knowledge to the firms in the control group.

The second group refers to the matching variables. We match firms on their financial structure for two reasons. Firstly, it is mandory for testing the main hyphotesis. Secondly,

the financial capability of the firm on a stand-alone basis is a requirement for joining the programme. We use the debt ratio and the current ratio (along with the total assets) as the literarure has determinated that they have a significant effect on the export performance. Additionally, we use exact matching on sector activity as credit constraints may affect sectors unevenly (Manova, 2013). The treatment variable, which represents the rationale for our study and incorporates the support provided by the programme, which can be simplified as the support provided in three main areas: advisory, market development, and operations (see Table I). Lastly, the outcome variables, where in addition to the matching variables, we consider the location and age of the SME.

Table I: Variables considered in the Study

Variables	Description
w	<u>Variables that affect treatment</u>: exports sales lower than 50% of total sales*; incorporated for at least two years; committed to internationalisation; financial capability to positioning itself abroad; never joined an initiation programme at ICEX before.
F	<u>Matching variables</u>: Total assets (used instead of total income as we are dealing with a programme that has the aim of increasing participants' foreign sales); debt ratio (indicator of potential growth, the lower the leverage the more possibilities to obtain external credit); current ratio (to assess short-term financial stress); sector activity.
d	<u>Treatment variable</u>: resource-based EPP: advisory (an advisor is assigned, an international marketing plan, information is provided in different fields including promotion activities); market development (market entry approach, routes to market, identification of customers and partners); operations (logistical support, search for local support services, queries to government's international network).
x_i	<u>Financial covariates outcome model</u>: $x_{i \in F}$: total assets; debt ratio; current assets
	<u>Non-financial covariates outcome model</u>: $x_{I \neq F}$: location; age.

*Unless exports destined to a maximum of five markets and a maximum of six clients.

5. Results

5.1. Matching process before obtaining results of export performance

For testing our hypotheses, first we need to carry out our matching process on each sub-population. We follow Caliendo and Kopeinig's (2008) references as explained in Table IV. In order to create the same starting point for both groups of firms, especially during the period of credit restrictions, we match their financial structure, considering their size and long and short-term financing possibilities at the beginning of the programme to avoid endogeneity problems.

In Tables V (1.2.), we show the whole process split by sectors. In the first row of each table, we have the number of non-treated firms considered as candidates to join the control group for each year t_i. Some of them will be matched to the number of treated firms that are in the second row. As we can see, the number of firms in sec_0 is slightly lower than in sec_1 but enough to be, *a priori,* confident to find good matches (e.g., for the year 2000, we have 27 treated firms and 3,490 non-treated firms as candidates for matching, while for the year 2013, we have 24 treated firms and 4,625 non-treated). As we have considered one-to-one matching for each year t_i using the Abadie and Imbens (2011) estimator, the number of matched firms in each group after the first matching step is the

same number of treated firms in the second row. The following rows explain the second step in our matching process where we impose the common support condition in the estimation of the propensity score to see if we can improve the quality of the matches. In the third row of each table we have the number of firms that were dropped each year t_i as they did not satisfy the balancing property based on their propensity score. We see that the number of dropped firms is small but, in some years, it might be considered relatively important (e.g., considering the year 2012-sec_0, four firms were dropped from an initial number of 24–16% of them). In row number four, we show the final number of matched firms (for each group) that satisfy the balancing property in the 28 sub-populations. The total number of firms reaches 1,585, of which 925 correspond to the period 2000-2007 and 660 to the period 2008-2013.

Finally, we separate the last two rows of Tables V (1.2.) to present the number of blocks in which the Becker and Ichino (2002) estimator stored those firms on the common support, along with the superior and inferior bounds, respectively. A two-sample t test considering equal variances is carried out to test that the mean propensity score is not different for treated and controls firms. The optimal number of blocks is one in 20 sub-populations, and higher in 8, but with very few firms in those additional blocks (not reported).

Our conclusion is that we have reached a good matching. However, to eliminate any doubt, especially on the sub-populations with more than one block, in Tables VI (1.2.3.4.), we take the 28 sub-populations and carry out additional two-sample t-tests to see that the mean of each matching covariate is not different for treated and control firms, that is to say, we run 28*3 = 84 individual tests. For the fixed variable, as it is split by sector, it is equal to considering exact matching on this variable, so no additional test is needed. For the three continuous financial covariates, as can be seen in columns six, eight, and ten of each table, all are significantly equal at 1% level.

Once the matching stage is finished, we focus on the covariates for the outcome model. In Tables VII (1.2.), we present exploratory data of the variables for each group and period, considering the information at the beginning of the programme, $t = 0$. In addition to the information about the matching covariates, we see that non-treated firms are, on average, older (1.51 years for the period 2000-2007 and 2.88 years for the period 2008-2013) and export more to non-EU countries than treated firms (157 thousand euros for the period 2000-2007 and 397 thousand euros for the period 2008-2013), which might be considered as a *proxy* for having more export experience. Additionally, non-treated firms are more concentrated in larger Spanish cities, which may provide productivity advantages according to the index of regional competitiveness for Spain 2000-2014 (Mancha-Navarro et al., 2017). To corroborate these statements, we run individual two-sample t-tests on these variables which report the same at a 1% level of significance. Therefore, according to the literature, and without considering the treatment variable, we may expect non-treated firms to have a better export performance.

5.2. Firms' export performance and hypotheses testing

After the matching phase, we evaluate the export performance of both groups of firms where, in order to reduce locking-in effects, we also divide the whole sample period 2000-2013 into two sub-periods, 2000-2007 and 2008-2013, as they present more similar characteristics.

In the first column of Tables VIII (1.2.3.) we can see the number of firms for each group, being Table VII.1. for the whole period (1,585 firms), Table VII.2. for sub-period 2000-2007 (925 firms), and Table VII.3. for sub-period 2008-2013 (660 firms). Columns two and three of each table show the average export sales in $t = 0$ and $t = 1$, respectively. In column four we see the average export performance of each group, which is the increase in export sales between $t = 0$ and $t = 1$. For the whole period, the average increase in export sales of treated firms almost doubled the average increase in export sales of non-treated firms, 193,877 euros against 99,421 euros, and the DID estimand is significant at the 5% level. Thus, hypothesis H1 is not rejected, and we may state that SMEs that used non-financial tailored resource-based programmes to develop their export marketing strategies improved their export performance more than non-treated firms.

When splitting into sub-periods, we may see that the average increase in export sales of both groups is much closer during the period 2000-2007, 171,901 euros for treated firms and 138,167 euros for non-treated. For the period with credit restrictions 2008-2013, the export performance of both groups indicates that firms that took advantage of the institutional support had better export performance as they increased their export sales, on average, by 224,678 euros, while non- treated firms did it by 40,600 euros, much less than during the period without credit market restrictions, and the DID estimand is significant at the 1% level.

Finally, in Tables IX (1.2.3.) we pay attention to the firms' size as it may be considered an important determinant of export market participation within the RBV (Kottaridi and Lioukas, 2017). Therefore, we focus on those SMEs that have more difficulties to engage into the export process. Following the European Union (EU) definition of micro companies, we take those SMEs that have a total balance sheet of less than two million euros. These tests provided the same information as for the total sample although some variables presented lower statistical significance (i.e. exports for period 2000–2007**, and 2008–2013*, location 2008–2013**, and Age 2000–2007**). The results in Table 7 (1) show that for the whole period, the average increase in export sales of treated firms was 40,014 euros higher than for non-treated firms, and the DID estimand is significant at the 5% level. For the period with credit restrictions, Table IX (3), treated firms almost doubled (52,957 euros) the increase of non-treated firms, with the DID being significant at the 10% level.

Thus, considering both samples of firms described in Tables VIII and IX, hypothesis H2 is rejected, and we may conclude that public non-financial tailored resource-based programmes improve the export performance of treated firms (in comparison to non-treated firms), especially during periods of tough credit market restrictions. This export

performance needs to be highlighted as it occurs in contrast to what was expected as non-benefitting firms were, on average, older, had more export experience, and were more concentrated in larger cities.

6. <u>Discussion and suggestions for future research</u>

The economic recession that Spain faced from 2008 to 2013 pushed the Spanish firms to the export market. However, the lack of credit financing that SMEs suffered during this period complicated the task. In this scenario, and in line with Kottaridi and Lioukas (2017), we understand that it is of particular relevance to managers and policymakers to identify the driving forces of export engagement of SMEs, which enhance competitiveness to exploit growth opportunities across borders with limited resources. For Basle et al. (2018) knowledge is the main source of firms' competitive advantage, and it is vital for dealing with uncertainties of the foreign business environment and will condition the mode and pace of internationalisation. Our results show that resource-based EPPs help firms to improve their export performance, which is in line with other studies (Broocks and Van Biesebroeck, 2017; Cansino et al., 2013; Freixanet, 2012; Karoubi et al., 2018; Munch and Schaur, 2018; Van Biesebroeck et al., 2016), and this is especially so during periods of tough credit restrictions.

We see three main and interrelated reasons that explain this statement, all of them under the umbrella of the treatment variable. Firstly, from a financial point of view, we may say that to reduce financing needs is equivalent to obtaining financing. Most SMEs that are non-exporters or sporadic exporters have limited international knowledge and they would need additional time (*if possible*) to do further research in the market, finding international promotion activities, to assess a correct route to market, or to identify and to reach potential customers and partners. The financial resources that these activities may cost, can be minimized (or at least reduced) by using initiation support programmes. Secondly, Zucchella et al. (2019) state that international entrepreneurial and innovative capabilities can help SMEs to overcome the scarcity of financial and tangible resources and have a positive and significant effect on SMEs' export performance. Developing entrepreneurial capabilities implies an active exploration of new business opportunities abroad, and innovation may be based on learning from the external environment (mainly from markets and customers) and applying entrepreneurially the acquired knowledge. In this regard, resource-based EPPs can enhance these capabilities. Lastly, from a culture point of view, for joining the programme, to be committed to the internationalisation of the firm is a requirement. Navarro-García et al. (2013) show that export market orientation has a positive effect on export commitment and export proactivity is an important determinant of the international behaviour. For benefitting firms, the market orientation goes along with the participation in the programme.

Our work also contributes to the literature on institutional support. We were not able to find a study that compares the effects of non-financial resource-based institutional programmes considering such different periods of time while controlling on the financial structure of the firms (this may be because the specific characteristics of the 2007/8 Spanish financial crisis and subsequent Spanish recession). Geldres-Weiss and Carrasco-

Roa (2016) find non-significant impacts considering export sales from 2002 to 2011, but they did not divide the period, which raises doubts about the time interval selected. Other studies show positive effects for a period when the financial environment was less challenging, for instance, Cansino et al. (2013) used data until 2008, or Volpe et al. (2012) used data from 2002 to 2006. Van Biesebroeck et al. (2016) used data from 2008 to 2010, thus considering only the financial crisis period. Broocks and Van Biesebroeck (2017) also consider the threshold for intra-EU trade and state that firms receiving more extensive forms of support are more likely to start exporting. However, they focus their data from 2003 to 2010 evaluating effects one or two years after receiving treatment. We understand that these periods might be too short, so we use three years in order to be closer to the definition of regular exporter.

Limitations and suggestions for future research

The selection of the two periods to carry out our analysis is straightforward considering 2007 as the year that financial conditions started to harden in Spain, and from 2008 to 2013 the period in which Spanish companies suffered important credit restrictions and the economy presented negative GDP growth figures. We may also think that as we assess the effect of the programme three years after it started, there are some years that could be considered "in the middle", for instance, for 2007, the effect is evaluated in 2010, and for 2013, in 2016, so other time periods could also be considered appropriate. However, we understand that the time lag of the external shocks in affecting firms' financing and their international trade, and especially the fact that we have matched on firms' financial variables when joining the programme, mostly resolves this issue. In any case, as a robustness check, we have used 2006 as the final year for the first period and 2007 as the first year for the second period and we have obtained similar results.

Due to intra-EU trade may not be reported under a fixed threshold, in order to have highly reliable data, we focus our analysis on export markets outside the EU. This limitation forces us to consider exports to the EU single market as national sales. However, it provides valuable information on export market diversification.

We understand that our results open an avenue for future research. We see four main paths to follow. Firstly, it would be useful to split the analysis narrowing samples by industry activity code in order to identify differences among them. This analysis would be conditioned on the availability of enough data for each industry. Secondly, it would be interesting to search for the intermediate factors on the performance of both groups, especially during the period of credit restrictions. For the analysis, the main challenge is relying on with those intangible factors such as human capital and managerial capabilities that could condition the performance. Thirdly, to assess the impact of the institutional support focused on born global companies, especially those with higher technology and scalable products. In this case, the main difficulty would be to identify the specific programmes that may fit the analysis. Lastly, as our analysis is focused on Spanish firms, our findings could be of interest for SMEs in other European countries, especially in those with a similar economic structure to Spain.

7. Conclusions

Our results show that non-exporting and sporadic exporting SMEs that developed their international marketing strategies using a non-financial resource-based institutional programme had a better export performance, measured by the increase in export sales, especially during periods with tough credit market restrictions.

In the model, the main difference between both groups of SMEs is the treatment variable, that is to say, the participation in the programme. This variable provides knowledge, capabilities, trust relationships and logistical support, and requests export commitment from participants, which altogether provides competitive advantages in foreign markets to accelerate the export performance of SMEs in comparison to the those in the control group. This happens even when the control group presents characteristics on some variables that the literature considers positive for their internationalisation. When considering micro-firms, this statement becomes even more important as they have additional internal resource constraints, including the firms' finances. Here, the institutional support can help them to fill the knowledge gap on trade finance and supply chain finance, for instance, by showing them products provided by Export Credit Agencies (ECAs) that can be used to obtain financing and rely on the importer's solvency.

Managerial and policy implications

Many SMEs still see the possibility of obtaining financial subsidies as the main tool of institutional support to help them boost their exports. However, in line with previous studies (Pergelova and Angulo-Ruiz, 2014), we understand that export managers, instead, should request institutional support to help them develop their international knowledge, which will enhance their R&C and make them compete successfully in the marketplace, especially, in periods with tough credit market restrictions. In addition, our results show that managers may consider this way of collaboration as a good channel to diversify their markets outside the EU, which becomes particularly relevant considering the dynamic creation of business opportunities in the global economy.

From a policymaker point of view, a key pillar to deal with is the publicity of the services. SMEs should know (and understand) that they have at their service the vast amount of resources (e.g. knowledge to be used, specialised consultants, government's international network in local countries, etc.) the public sector already has in order to help them. A good action could be to add a financial memory to these services putting them in terms of market-cost so firms can see the financial benefits. In line with Freixanet (2012) and Leonidou et al. (2015), publicity should be especially increased for programmes that are not sufficiently known. The results of these types of programmes should be spread among trade journals, business organisations, associations, and even business schools, where managers could have first-hand information and increase their participation in those programmes that might fit their needs. Lastly, in order to reach more firms and improve firms' satisfaction, we also understand that it would be useful to develop similar programmes for non-exporters and sporadic exporters but focused on different types of

firms' characteristics, for instance, larger firms or born global firms with high technology and scalable products, providing tailored advisory services for these potential exporters.

APPENDIX A: TABLES

Table II: Description of variables that affect the Outcome Model and Sources of Data

Variables Description and Sources of Data		
Variable (description)	Description	Source
Exports_No_EU	Total exports of firm i outside the EU	Custom authorizing firms / Treasury
Treatment	Dummy variable 1 if the firm has joined the programme	ICEX
Total assets	Data in logarithm10	SABI / Bureau Van Dijk
Debt ratio	Total liabilities / Total assets	SABI / Bureau Van Dijk
Current ratio	Current assets / non-current assets	SABI / Bureau Van Dijk
Industry (NACE 2009)	Dummy variable 1 if main activity is extractive, manufacturing or construction	SABI / Bureau Van Dijk
Location	Dummy variable with value 1 if province in MAD; BCN, NAV; BC; VAL; VALL	SABI / Bureau Van Dijk
Age	Years since inception and initiation of the programme	SABI / Bureau Van Dijk
Year	Dummy variable 1 if crisis years and 0 otherwise	Invariant

Source: Own elaboration

Tables III: Correlation Matrix among Variables per Periods in t = 0

Table III.1. Correlation Matrix among Variables for Period 2000–2007, in t = 0								
	Exports_No_EU	Treatment	Total assets	Debt ratio	Current ratio	Sector	Location	Age
Exports_No_EU	1							
Treatment	-0.1025	1						
Total assets	0.3157	0.0013	1					
Debt ratio	-0.0397	-0.0006	-0.1992	1				
Current ratio	-0.0176	0.0085	0.0163	-0.4483	1			
Sector	0.0468	0.0000	0.1599	-0.1365	0.0472	1		
Location	-0.0284	-0.0854	-0.0413	-0.0657	0.0265	-0.1148	1	
Age	0.1309	-0.0611	0.3783	-0.3317	0.1031	0.1307	0.0923	1

Source: Own calculations

Table III.2. Correlation Matrix among Variables for Period 2008–2013, in t = 0								
	Exports_No_EU	Treatment	Total assets	Debt ratio	Current ratio	Sector	Location	Age
Exports_No_EU	1							
Treatment	-0.1307	1						
Total assets	0.2758	-0.0022	1					
Debt ratio	-0.0138	-0.0000	-0.2653	1				
Current ratio	-0.0109	0.0191	0.0756	-0.4450	1			
Sector	0.0262	0.0000	0.2136	-0.1401	0.0191	1		
Location	0.0095	-0.0971	-0.0365	-0.0423	0.0452	-0.0842	1	
Age	0.1054	-0.1141	0.3411	-0.3074	0.0916	0.1447	0.1328	1

Source: Own calculations

Table IV: Matching Process and Implementation of Propensity Score (Caliendo and Kopeinig, 2008)

1. Selection of matching variables			2. Choice Among Alternative Matching Algorithms				
Model choice:	Variable choice:		Matching Algorithm:	Caliper:	Scaling matrix for matching:	Consistent estimator:	Identification of pairs:
Logit	Economic issues: Selected by economic theory and previous empirical evidence	Key variables: Exact match on industry. Continuous financial variables of firms.	Nearest-neighbour (nn) matching with replacement	Default in Stata	Metric (mahalanobis)*	Bias adjustment**	Generate id of match

3. Propensity Score - Check Overlap and Common Support					4.1 Assessing the Matching Quality	4.2 Calculation of Treatment Effects	
Model choice:	Option:	Balancing property:	Implementation:		Tests: t-test	When to compare:	
Propensity Score (ps) (Logit)	Common support selected	Drop firms until BP is satisfied (if needed)	Caliper: Default in Stata	Minima and maxima bound comparison	Significance level of 1% for each sub-population and each three financial variables	From the begining of the programme to avoid endogeneity problems	Attention to the possible occurrence of locking-in effects. Two periods selected: 2000-2007 and 2008-2013.

5. Sensitivity Analysis	
Hidden Bias:	Common Support:
Calculation of Rosenbaum - bounds.	Test the sensitivity of estimated treatment effects. Different time periods tested.

* Initially, we used an estimator that determines the nn by using a weighted function of the covariates for each observation using the Mahalanobis distance, in which the weights are based on the inverse of the covariates' variance–covariance matrix.

** However, as we match on three continuous covariates, in order to avoid biased estimators, we use the bias corrector proposed by Abadie and Imbens (2011), which makes an adjustment based on regression functions.

Tables V: Results Two Steps Matching Process by Sector

Table V.1. Two Steps Matching Process: sec_1														
Number of firms / Year	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**
1.Non-treated for matching	5,013	5,315	5,663	5,817	5,720	5,724	5,841	5,670	5,727	5,729	5,691	5,647	5,618	5,290
2.Matched firms. First step	117	37	87	103	93	99	78	92	94	112	111	54	51	37
3.Firms dropped. Second step	2	1	2	3	0	3	0	2	0	0	0	1	0	3
4.On common support	**115**	**36**	**85**	**100**	**93**	**96**	**78**	**90**	**94**	**112**	**111**	**53**	**51**	**34**
Number of blocks	2	1	1	1	1	1	1	1	1	2	1	1	1	1
Inferior and superior bounds	[0.48 - 0.62]	[0.48 - 0.53]	[0.49 - 0.50]	[0.49 - 0.51]	[0.49 - 0.50]	[0.49 - 0.57]	[0.50 - 0.52]	[0.49 - 0.52]	[0.48 - 0.55]	[0.43 - 0.73]	[0.48 - 0.55]	[0.48 - 0.52]	[0.49 - 0.55]	[0.47 - 0.52]

Source: Own calculations

Table V.2. Two Steps Matching Process: sec_0														
Number of firms / Year	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**
1.Non-treated for matching	3,490	3,772	4,305	4,519	4,566	4,717	4,800	4,731	4,894	4,919	4,924	4,909	4,916	4,625
2.Matched firms. First step	27	27	25	34	26	40	36	27	36	61	38	24	29	24
3.Firms dropped. Second step	2	1	4	0	2	0	0	1	0	1	1	1	4	0
4.On common support	**25**	**26**	**21**	**34**	**24**	**40**	**36**	**26**	**36**	**60**	**37**	**23**	**25**	**24**
Number of blocks	1	3	3	3	1	1	1	1	1	1	1	4	1	1
Inferior and superior bounds	[0.48 - 0.51]	[0.25 - 0.72]	[0.36 - 0.63]	[0.42 - 0.85]	[0.47 - 0.56]	[0.49 - 0.52]	[0.44 - 0.53]	[0.46 - 0.52]	[0.42 - 0.59]	[0.49 - 0.50]	[0.49 - 0.55]	[0.33 - 0.80]	[0.47 - 0.57]	[0.47 - 0.58]

Source: Own calculations

Tables VI: Matching Process on Selected Covariates Carried Out on each Sub-Population

VI.1.) Period 2000–2007. Sector 1 in t = 0

Sub-pop	Sect.	Year	Nb of firms	Varia ble 1	t-test$_{TA}$†	Varia ble 2	t-test$_{DR}$†	Varia ble 3	t-test$_{CR}$†
1	sec_1	2000	115	TA	***	DR	***	CR	***
2	sec_1	2001	36	TA	***	DR	***	CR	***
3	sec_1	2002	85	TA	***	DR	***	CR	***
4	sec_1	2003	100	TA	***	DR	***	CR	***
5	sec_1	2004	93	TA	***	DR	***	CR	***
6	sec_1	2005	96	TA	***	DR	***	CR	***
7	sec_1	2006	78	TA	***	DR	***	CR	***
8	sec_1	2007	90	TA	***	DR	***	CR	***

VI.2.) Period 2000–2007. Sector 0 in t = 0

Sub-pop	Sect.	Year	Nb of firms	Varia ble 1	t-test$_{TA}$†	Varia ble 2	t-test$_{DR}$†	Varia ble 3	t-test$_{CR}$†
9	sec_0	2000	25	TA	***	DR	***	CR	***
10	sec_0	2001	26	TA	***	DR	***	CR	***
11	sec_0	2002	21	TA	***	DR	***	CR	***
12	sec_0	2003	34	TA	***	DR	***	CR	***
13	sec_0	2004	24	TA	***	DR	***	CR	***
14	sec_0	2005	40	TA	***	DR	***	CR	***
15	sec_0	2006	36	TA	***	DR	***	CR	***
16	sec_0	2007	26	TA	***	DR	***	CR	***

Source: Own calculations

- † two-sample t-test after matching to check if there are significant differences in covariate means for both groups, treated and non-treated. (TA: Total assets; DR: Debt ratio; CR: Current ratio).
- ***, **, * indicate significance at the levels of 1%, 5%, and 10 %, respectively.

VI.3.) Period 2008–2013. Sector 1 in t = 0

Sub-pop	Sect.	Year	Nb of firms	Varia ble 1	t-test$_{TA}$†	Varia ble 2	t-test$_{DR}$†	Varia ble 3	t-test$_{CR}$†
17	sec_1	2008	94	TA	***	DR	***	CR	***
18	sec_1	2009	112	TA	***	DR	***	CR	***
19	sec_1	2010	111	TA	***	DR	***	CR	***
20	sec_1	2011	53	TA	***	DR	***	CR	***
21	sec_1	2012	51	TA	***	DR	***	CR	***
22	sec_1	2013	34	TA	***	DR	***	CR	***

VI.4.) Period 2008–2013. Sector 0 in t = 0

Sub-pop	Sect.	Year	Nb of firms	Varia ble 1	t-test$_{TA}$†	Varia ble 2	t-test$_{DR}$†	Varia ble 3	t-test$_{CR}$†
23	sec_0	2008	36	TA	***	DR	***	CR	***
24	sec_0	2009	60	TA	***	DR	***	CR	***
25	sec_0	2010	37	TA	***	DR	***	CR	***
26	sec_0	2011	23	TA	***	DR	***	CR	***
27	sec_0	2012	25	TA	***	DR	***	CR	***
28	sec_0	2013	24	TA	***	DR	***	CR	***

Source: Own calculations

- † two-sample t-test after matching to check if there are significant differences in covariate means for both groups, treated and non-treated. (TA: Total assets; DR: Debt ratio; CR: Current ratio).
- ***, **, * indicate significance at the levels of 1%, 5%, and 10 %, respectively.

Tables VII: Outcome model covariatees. Explanatory data and comparison between Treated and Non-Treated Firms per Periods in t = 0

Table VII.1. Comparison between Treated and Non-Treated Firms for Period 2000–2007, in t = 0							
Period 2000-2007	**Exploratory data treated (T) firms in t = 0**			**Exploratory data for non-treated (NT) firms in t = 0**			**t-test sig**
Variables	**Obs**	**Mean**	**Std. Err.**	**Obs**	**Mean**	**Std. Err.**	**sig**
Exports_No_EU	925	169,919	16,466	925	327,191	31,464	NT > T
Total assets	925	3.367	0.016	925	3.368	0.016	***
Debt ratio	925	0.651	0.007	925	0.652	0.007	***
Current ratio	925	0.016	0.000	925	0.016	0.000	***
Sector	925	0.749	0.014	925	0.749	0.014	***
Location	925	0.448	0.016	925	0.534	0.016	NT > T
Age	925	15.60	0.391	925	17.11	0.417	NT > T

Source: Own calculations

- ***, **, * indicate significance at the levels of 1%, 5%, and 10 %, respectively.

Table VII.2. Comparison between Treated and Non-Treated Firms for Period 2008–2013, in t = 0							
Period 2008-2013	**Exploratory data treated (T) firms in t = 0**			**Exploratory data for non-treated (NT) firms in t = 0**			**t-test sig**
Variables	**Obs**	**Mean**	**Std. Err.**	**Obs**	**Mean**	**Std. Err.**	**sig**
Exports_No_EU	660	170,685	16,642	660	567,952	81,299	NT > T
Total assets	660	3.387	0.020	660	3.389	0.020	***
Debt ratio	660	0.592	0.010	660	0.592	0.010	***
Current ratio	660	0.024	0.001	660	0.023	0.001	***
Sector	660	0.689	0.018	660	0.689	0.018	***
Location	660	0.474	0.019	660	0.571	0.019	NT > T
Age	660	18.20	0.478	660	21.08	0.501	NT > T

Source: Own calculations

- ***, **, * indicate significance at the levels of 1%, 5%, and 10 %, respectively.

Tables VIII: Export performance

Table VIII.1. Growth in exports all firms for period 2000 – 20013 (2016)				
	Nb firms	Export sales, $t = 0$	Export sales, $t = 1$	Δ Export sales
Treated 2000–2013 (2016)	1,585	170,239	364,116	193,877
Non-treated 2000–2013 (2016)	1,585	410,826	510,247	99,421
DID (treated – non treated)		−240,588 *(40.81)****	−146,131 *(50.57)****	94,457 *(41.48)***

Source: Own calculations

Table VIII.2. Growth in exports for period 2000 – 2007 (2010)				
	Nb firms	Export sales, $t = 0$	Export sales, $t = 1$	Δ Export sales
Treated 2000 – 2007 (2010)	925	169,919	341,820	171,901
Non-treated 2000 – 2007 (2010)	925	315,823	453,990	138,167
DID (treated – non treated)		−145.903 *(34.33)****	−112,170 *(65.61)**	33,733 *(50.79)*

Source: Own calculations

Table VIII.3. Growth in exports for period 2008 – 2013 (2016)				
	Nb firms	Export sales, $t = 0$	Export sales, $t = 1$	Δ Export sales
Treated 2008 – 2013 (2016)	660	170,686	395,364	224,678
Non-treated 2008 – 2013 (20116)	660	547,350	587,950	40,600
DID (treated – non treated)		−376,664 *(86.11)****	−192,586 *(77.66)***	184,079 *(69.72)****

Notes: ***, **, * indicate significance at the levels of 1%, 5%, and 10%, respectively.

Source: Own calculations

Tables IX: Export Performance. Micro companies

Table IX.1. Growth in exports for period 2000 – 20013 (2016). Micro companies				
	Nb firms	Export sales, $t = 0$	Export sales, $t = 1$	Δ Export sales
Treated 2000 – 2007 (2010)	684	69,259	154,965	85,706
Non-treated 2000 – 2007 (2010)	684	92,022	137,714	45,691
DID (treated – non treated)		−22,763 *(9.89)***	17,251 *(20.49)*	40,014 *(16.29)***

Source: Own calculations

Table IX.2. Growth in exports for period 2000 – 2007 (2010). Micro companies				
	Nb firms	Export sales, $t = 0$	Export sales, $t = 1$	Δ Export sales
Treated 2000 – 2007 (2010)	417	69,693	142,901	73,208
Non-treated 2000 – 2007 (2010)	417	94,625	137,811	43,186
DID (treated – non treated)		−24,932 *(12.85)**	5,090 *(24.37)*	30,022 *(19.01)*

Source: Own calculations

Table IX.3. Growth in exports for period 2008 – 2013 (2016). Micro companies				
	Nb firms	Export sales, $t = 0$	Export sales, $t = 1$	Δ Export sales
Treated 2008 – 2013 (2016)	267	67,604	174,575	106,971
Non-treated 2000 – 2013 (20116)	267	85,468	139,483	54,015
DID (treated – non treated)		−17,864 *(15.46)*	35,093 *(37.79)*	52,957 *(30.59)**

Notes: ***, **, * indicate significance at the levels of 1%, 5%, and 10%, respectively.

Source: Own calculations

APPENDIX B: ECONOMIC AND FINANCIAL ENVIRONMENT. SPAIN 2000-2016

B.1: Number of Spanish exporters and Regular exporters. (Source ICEX).

B.1.1: Number of firms that start/re-start, interrupt, and regular exporters
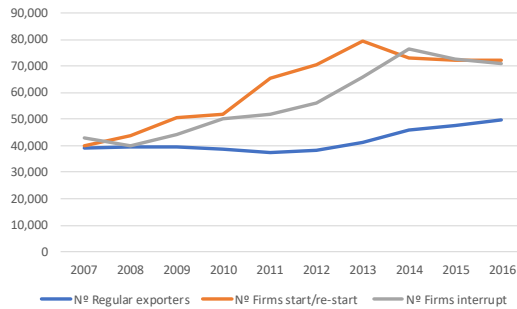
B.1.2: Number of regular exporters that start/ re-start and interrupt
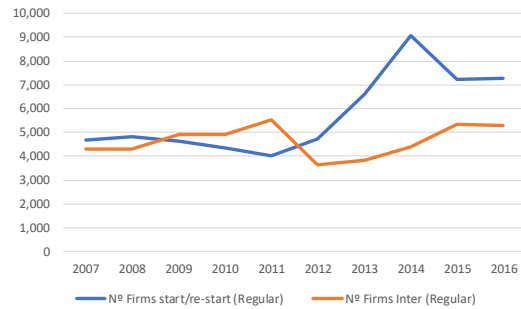
B.2: Financing to Public Administration and Non-Financial Firms. (Source: Bank of Spain).

B.2.1: Financing to public administrations. (*Interannual rate*)
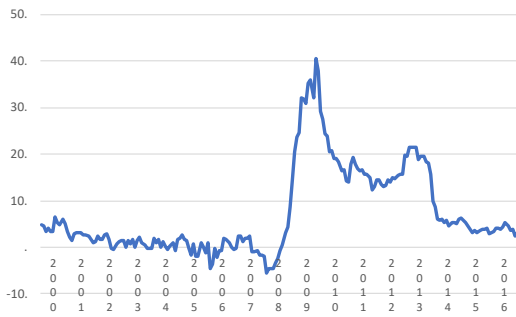
B.2.2: Total financing to non-financial firms (*Interannual rate*)
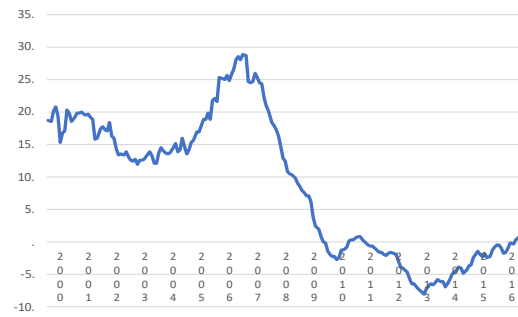
B.2.3: Total financing to non-financial firms (*Cash flow).(Moving average 3 years*)
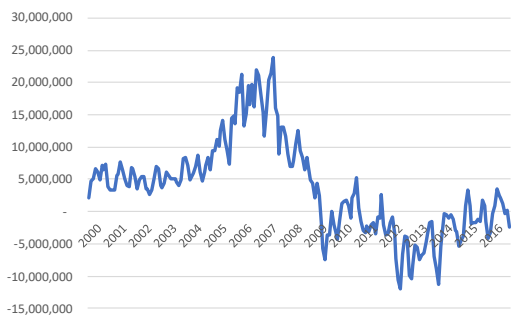
B.2.4: Financial credit by sector activity (*Interannual rate*)
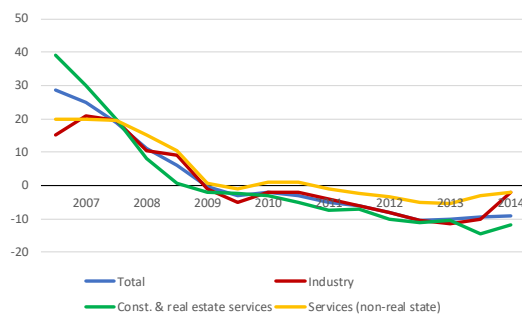
B.3: SMEs Survey. Changes in criteria for loans to SMEs. (Source: Bank of Spain).

B.3.1: Time period. Changes in criteria for loans approval to SMEs *(last 3 months % net)*
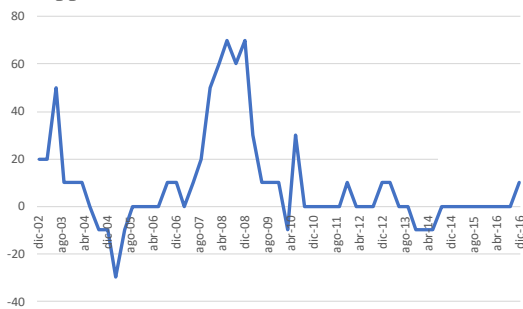
B.3.2: Contribution to changes in criteria for loans approval to SMEs *(last 3 months % net)*
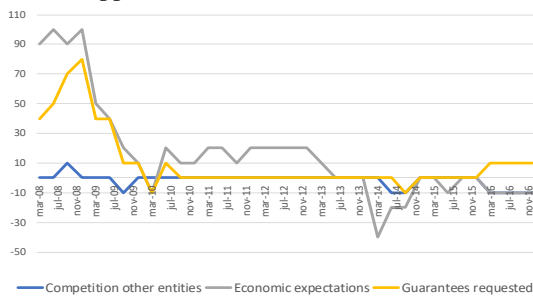
APPENDIX C: EVOLUTION OF THE MAIN ITEMS BY SECTORS AND PERIODS

## C.1: Evolution of main items: Sec_1

### C.1.1: Period 00-07: Total Assets_Sec_1
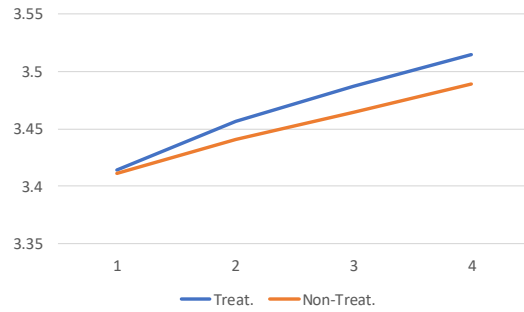
### C.1.3: Period 00-07: Debt ratio_Sec_1
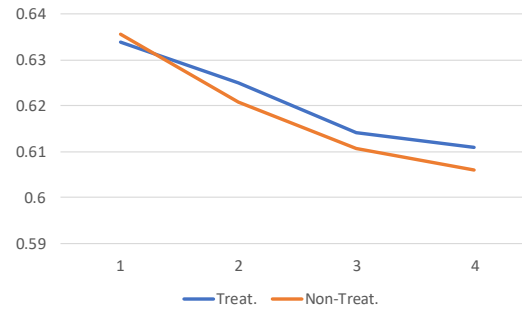
C.1.5: Period 00-07: Current ratio_Sec_1
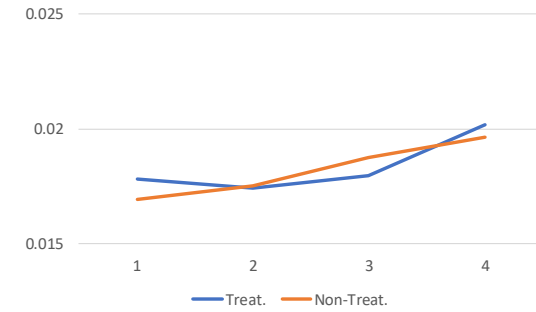
C.1.2: Period 08-13: Total Assets_Sec_1
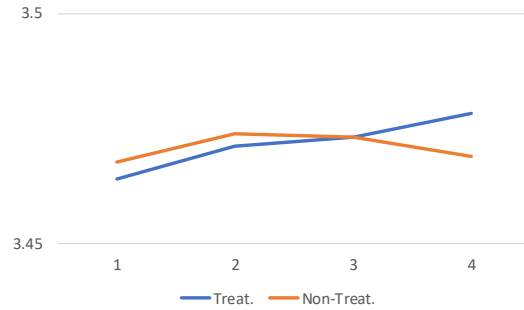
C.1.4: Period 08-13: Debt ratio_Sec_1
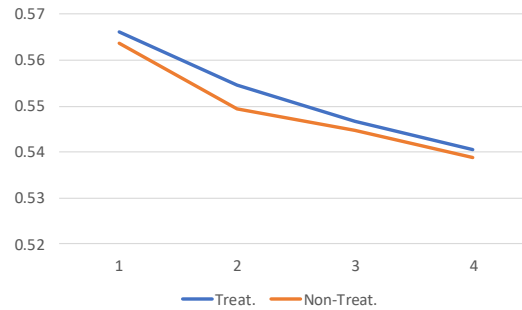
C.1.6: Period 08-13: Current ratio_Sec_1
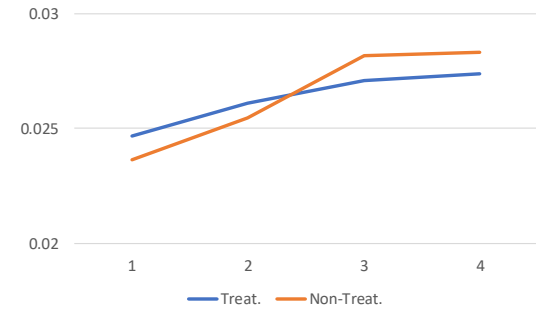
C.2: Evolution of main items: Sec_0

C.2.1: Period 00-07: Total Assets_Sec_0
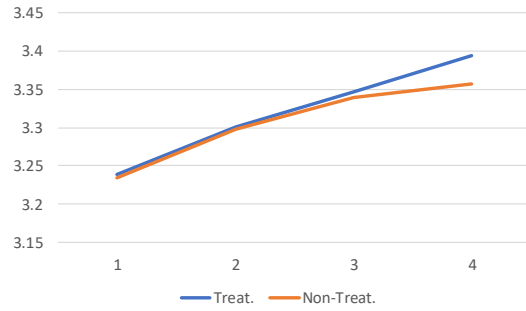
C.2.3: Period 00-07: Debt ratio_Sec_0
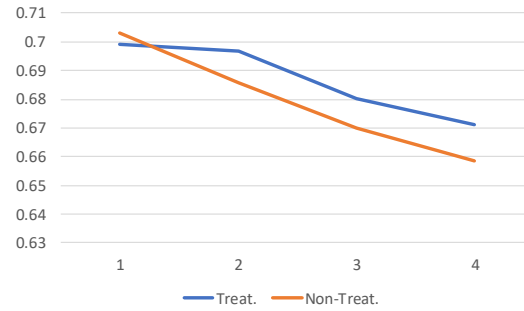
C.2.5: Period 00-07: Current ratio_Sec_0
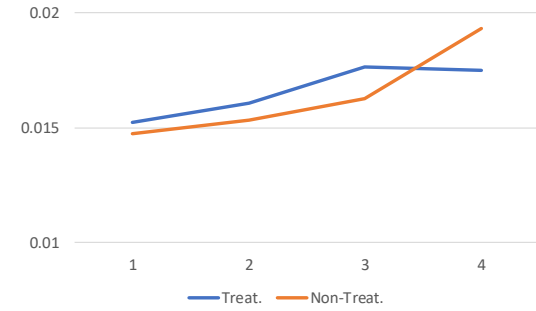
C.2.2: Period 08-13: Total Assets_Sec_0
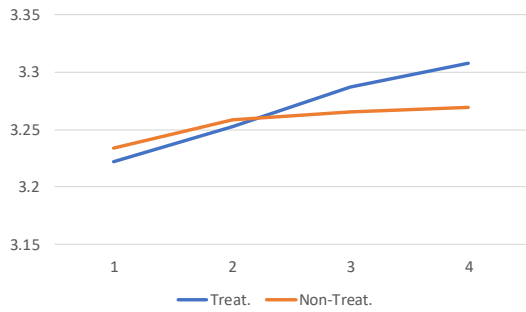
C.2.4: Period 08-13: Debt ratio_Sec_0
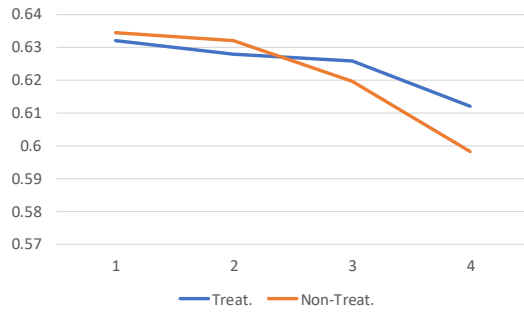
C.2.6: Period 08-13: Current ratio_Sec_0
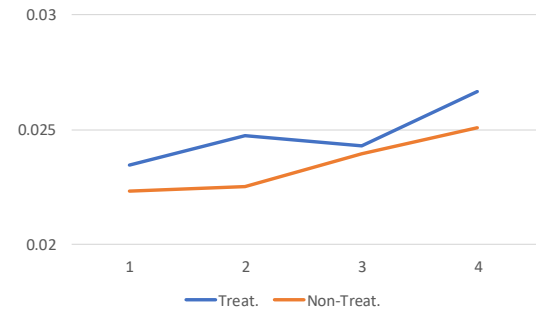
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